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Bronze Age trade and exchange through the Alps: influencing cultural variability?

Benjamin Jennings

Introduction

Trade and exchange in prehistory revolved around more than simply the circulation of goods; it was about social communication, the maintenance of intra-community relationships, the transmission of technology, ideas and manufacturing processes, and the generation of social power and prestige. In this respect the Circum-Alpine region has been considered as a 'buffer' or 'interaction' zone between northern Europe and the Mediterranean, linking northern European cultures with those of the southern Alpine slopes and the Italian peninsula (Della Casa 2002; Primas and Schmid-Sikimić 1997). Utilising the theoretical concepts of *relational theory*, *object biographies* and *cultural object translation* provides an opportunity to interpret the changing social values of objects as they travelled between different regions, and illuminate the cultural effects of involvement in exchange networks on communities that participated in them. Before considering the biography of objects it is necessary to identify which objects were circulated through the Alps, where they came from, and the routes along which they flowed.

Long and short-distance trade routes through the Alps and beyond

Recent programmes of archaeological survey have helped to identify routes along which trade and communication may have flowed through the Alps, utilising Alpine valleys to connect northern Italy, Switzerland, Austria, and eastern France, in addition to the exploitation of highland resources (*e.g.* Della Casa 2002; Suter *et al.* 2006). Artefacts found during these surveys indicate that the routes were used over successive time periods, which is reasonable to expect given that the possible routes are restricted by the landscape topography and few other options were available. However, while the surveys show that the Alps were not an insurmountable barrier between the regions north and south of the mountain range, they do not provide indications of where material was being transported from, or to where it may have been destined. Considering these factors highlights one of the frequently mentioned fallacies of communication across the Alps, particularly with

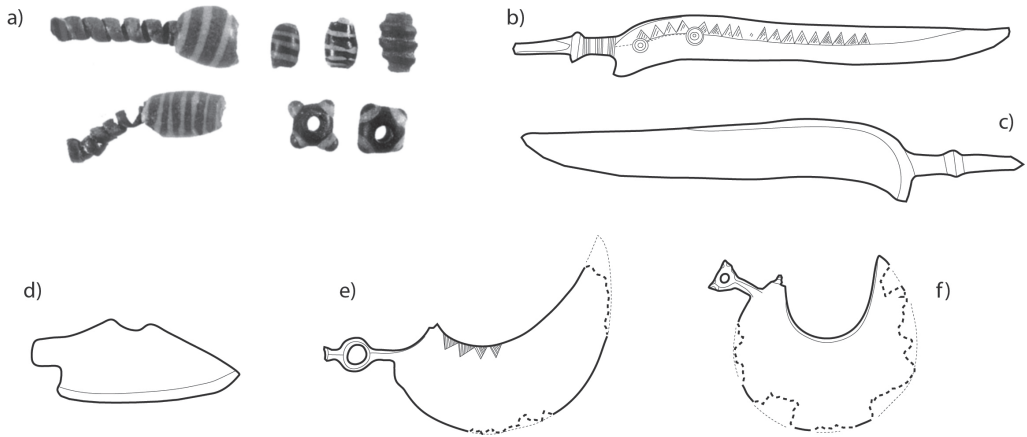


Figure 8.1. a) Pfahlbauperlen, left two shown at twice the scale of remainder (after: Rychner-Farragi 1993; reproduced with permission of Laténium, Archaeology Park and Museum, Neuchâtel); b) LBA knife from Möriegen (re-drawn from Bernatzky-Goetze 1987); c) Herrnbaumgarten knife from Hadersdorf am Kamp, Austria (re-drawn from Rihovsky 1972); d) Auvernier razor from Möriegen (re-drawn from Jockenhovel 1971); e) Herrnbaumgarten razor from Herrnbaumgarten, Austria (re-drawn from Jockenhovel 1971); f) Villanovan razor from Möriegen (re-drawn from Bernatzky-Goetze 1987).

reference to later prehistory and the Iron Age: that trade, exchange and communication relationships primarily concerned the flow of goods and information from the ‘advanced Mediterranean’ to the ‘barbarian north’. A key factor influencing such statements is the general ‘invisibility’ of objects which may have travelled from north to south, such as furs, pelts, and leather, when compared to those durable manufactured objects which may have moved in the opposite direction, such as glass, metalwork, and, particularly during the Iron Age, ceramics (Nash Briggs 2003).

A significant exception to these ‘invisible’ objects from the north is Baltic amber (succinite), sourced from along the Baltic coast and inland deposits in Latvia, Lithuania, and Poland, but also occurring as far away as eastern England. Fortunately for the archaeologist, amber is relatively durable in the archaeological record, and also definable through archaeometric analysis, allowing us to understand whether it originated from the Baltic or other regional European deposits (e.g. Beck and Shennan 1991, Murillo-Barroso and Martín-Torres 2012; Angelini and Bellintani 2005). One of the earliest attempts to chart trade routes connecting northern Europe to the Italian peninsula utilised amber as the main object of focus, identifying find locations, categorising them by period, and essentially ‘joining the dots’ to suggest paths along which goods were transported (De Navarro 1925). While recent contributions have updated the find catalogue (e.g. Stahl 2006) and included areas of Europe not covered by De Navarro (e.g. Palavestra 2007), the overall distribution pattern of amber artefacts in Europe north of the Alps has changed little.

Objects circulated in the opposite direction (*i.e.* south to north) travelled just as far as

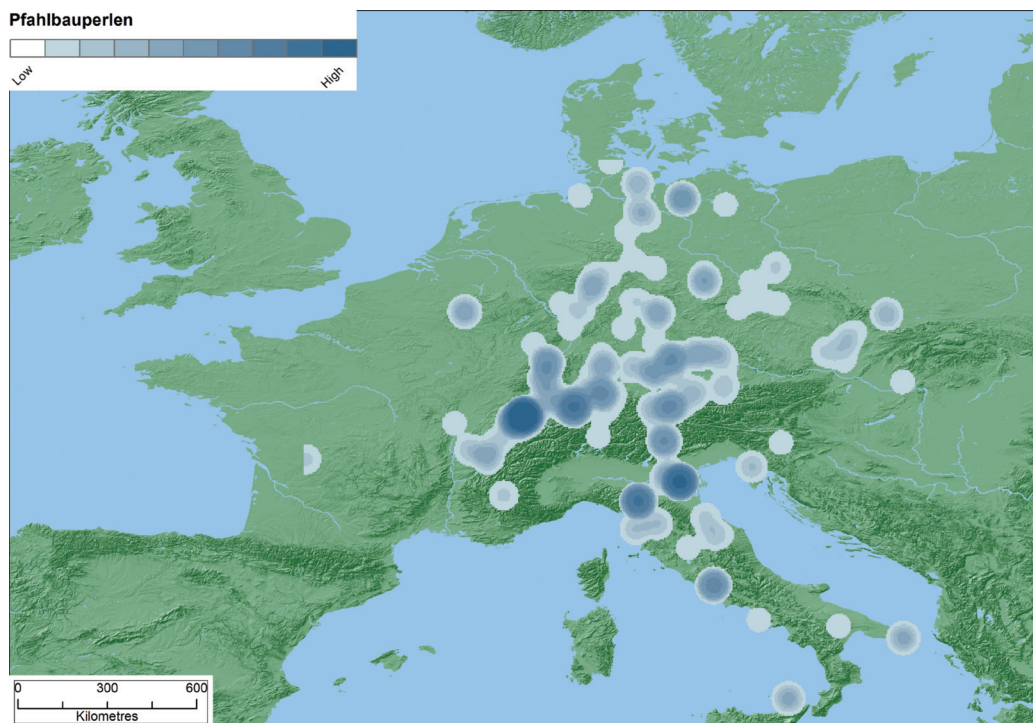


Figure 8.2. Density distribution of *Pfahlbauperlen* (after: Jennings 2013).

amber. One of the best examples are the so-called *Pfahlbauperlen*: small blue and white glass beads (Fig. 8.1.a) relating to the Late Bronze Age (c. 1100–800 BC), found in varying quantities between the Italian peninsula and northern Germany/Denmark (Fig. 8.2). These beads were initially named due to their presence in the lake-settlements of the northern Circum-Alpine region (see Haevernick 1978), but the discovery and excavation of Frattesina (Po Plain, Italy) during the late 20th century, produced the only direct evidence for the manufacture of these beads in Europe (Angelini *et al.* 2004; Angelini *et al.* 2009; Bellintani and Stefan 2009). Archaeometric analysis has confirmed that many of these beads from northern Europe are of the glass composition known from Frattesina (Henderson 1993; Bauer *et al.* 2004; Mildner *et al.* 2013), and it is therefore assumed/hypothesised that they were produced at Frattesina and traded northwards.

It is not possible to envisage a direct or commercial trade connection between northern Europe and the Italian peninsula; rather a series of short distance interactions between communities circulating a range of items in regional exchange systems should be postulated. Such a ‘down-the-line’ (see Renfrew and Bahn 2012) system would, partially, explain the decreasing occurrence of the *Pfahlbauperlen* with greater distance from their production centre in the Po Plain (Fig. 8.2) (Jennings 2012). Whether the participants at either extent of the distribution knew of the primary origin of the objects or their ultimate destination

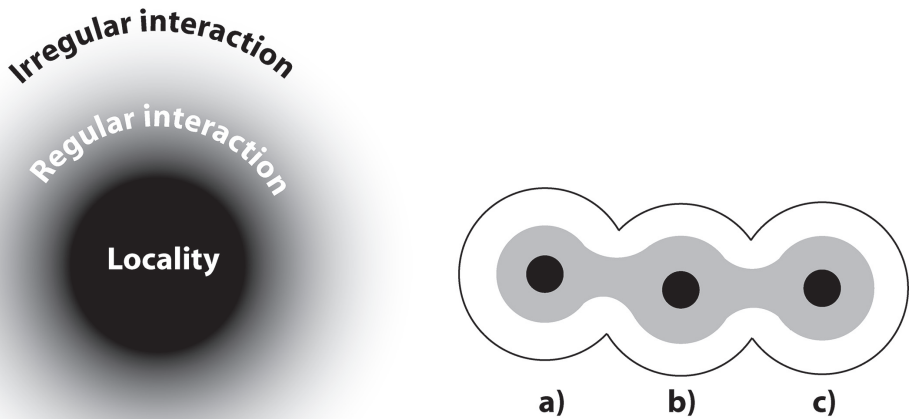


Figure 8.3. Knowledge of distant regions and communities was transmitted through communication networks, expanding the knowledge base of communities with regard to other regions (A–B), but with diminishing accuracy as distances, and number of involved regions, increases (A–C) (after: Jennings 2013).

is unclear, but some indications are provided by the ancient Greek belief that amber originated from the Electride Islands – attributed by some authors to be in the northern Adriatic and connected to the Po Plain (Palavestra 2007; Braccesi 2004); *i.e.* the region of Frattesina and Grignano amber processing sites (Bellintani 2002; Bellintani 1997; Salzani 2009). A community's knowledge of items' origins diminished as objects travelled further away from their source, and individuals/communities participating in their circulation assimilated information of distant places acquired through communication with 'traders' into local spheres of significance and mental maps. This expanded their knowledge and perception of both local and distant environments, but also led to a mixing of fact with myth (Fig. 8.3).

In contrast to the circulation of *Pfahlbauperlen* and amber between northern and southern Europe, some objects travelled over much smaller distances, and possibly indicate quasi commercial exchange networks. For instance, the use, exchange, and deposition of regularised sickle fragments has previously been interpreted as a form of 'proto-currency' (Sommerfeld 1994; Primas 1986), potentially used in immediate return (commercial or bargaining) exchange relationships. A brief review of sickle typology of the Late Bronze Age (*e.g.* Primas 1986) indicates that sickle types and variants were primarily exchanged over *intra-* (short) rather than *inter-* (long) regional networks (Fig. 8.4). If sickle fragments were utilised as a basic unit of exchange, they did not travel long distances, raising questions as to the method by which objects travelled over larger areas. Objects circulated over short-distance networks may have travelled as *commodities*: items which have a prescribed value

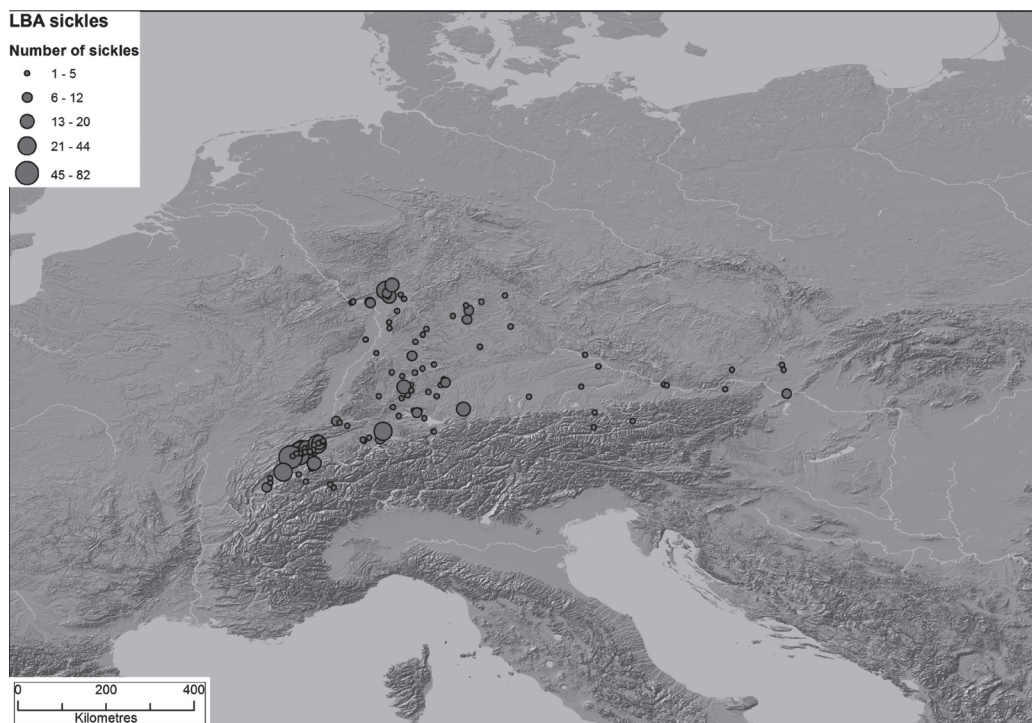


Figure 8.4. Distribution of Late Bronze Age sickles of types found in the lake-dwellings of Switzerland. Primary distribution is evident around Lake Neuchâtel, with some spread into southern Germany (data from: Primas 1986; after: Jennings 2013).

based on their production and potential use, for example intact sickles, and primarily stay within a 'cultural region'. Glass beads, travelling over long-distance networks, are more likely to have circulated as prestige items, possibly made as gifts between elite members of communities, as they moved northwards through Europe (see Sharples 2010). However, they need not travel the entire distance as prestige gift objects; in their region of manufacture glass beads were likely treated as a commodity, only attaining a prestige value as they left their production zone. Such a pattern of value change is also recorded for amber in northern Europe/Denmark, where it was relatively absent in prestige burials of the Late Bronze Age, but instead was collected for exchange with the south (Beck and Shennan 1991).

Trade and exchange in lacustrine settlements: identifying objects

Aside from the *Pfahlbauperlen* and amber, a range of imported objects can be seen in the lake-dwellings of the northern Circum-Alpine region. These are not only confined to the Late Bronze Age, but also include the Neolithic (*e.g.* ceramics at Arbon-Bleiche 3 (Leuzinger 2000)) and the Early Bronze Age (*e.g.* loaf-of-bread idols at Bodman-Schachen I (Königer and Schlichtherle 2001)). Although it is possible to identify some 'foreign' ceramics in

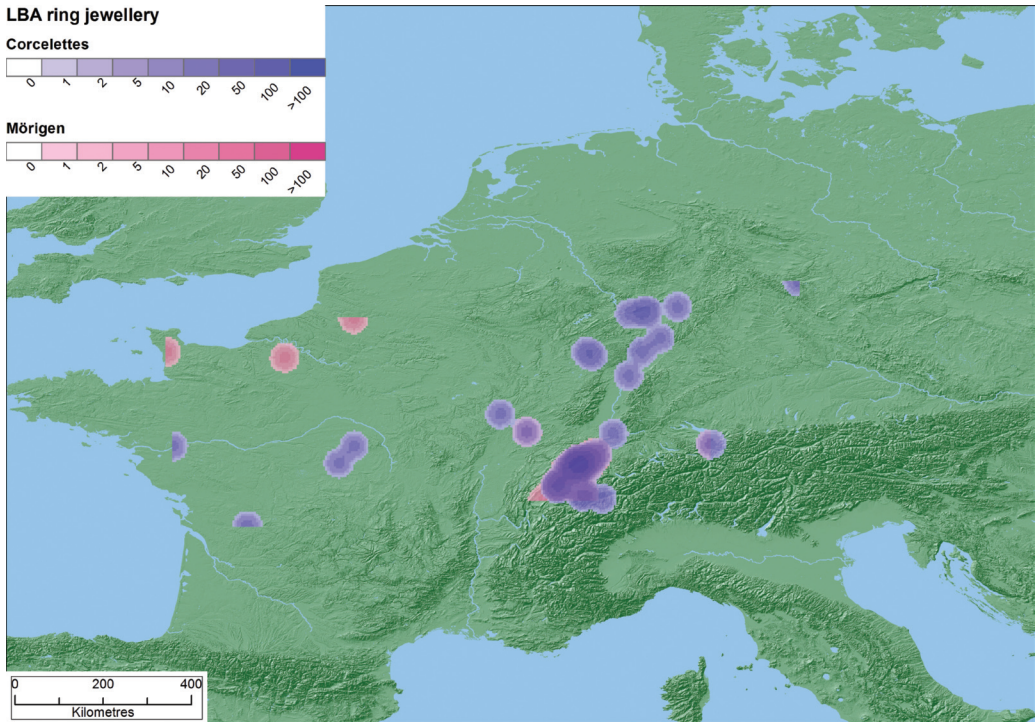


Figure 8.5. Density distribution of Late Bronze Age arm- and leg-rings of the Corcelettes and Möriegen types (after: Jennings 2013).

the Late Bronze Age material recovered from lake settlements (e.g. Bernatzky-Goetze 1987; Mäder 2001b), the metalwork assemblages provide a greater opportunity to observe intra- and inter-regional connections, particularly as artefacts from many areas of Europe have been published in typological catalogues under the *Prähistorische Bronzefunde* series. The use of such catalogues and artefact distribution maps as a method of demonstrating inter-cultural communication largely fell out of fashion during the Post-Processual turn in archaeological theory; however, if combined with a sound theoretical background these catalogues and distribution plots can provide new insights to the trade and exchange routes utilised during the Late Bronze Age.

Some metalwork objects show clear distribution concentrations, and either inferred or proven (through moulds and half-fabricated pieces) manufacture in the lake settlements of western Switzerland. For instance, many styles of arm- and leg-ring are seen in high concentrations around Lake Neuchâtel, with moulds and half-fabricated objects known from Hauterive-Champréveyres (HaA-HaB) (Rychner-Faraggi 1993) and Möriegen (HaB3) (Bernatzky-Goetze, 1987). Many of these types of ring jewellery, for example *Auvernier* and *Sion*, show limited circulation within western Switzerland (Pászthory 1985). Other forms, for instance types *Homburg* and *Balingen*, are widely distributed throughout Switzerland, southern Germany, the Middle Rhine Valley, and central France (Pászthory 1985; Richter

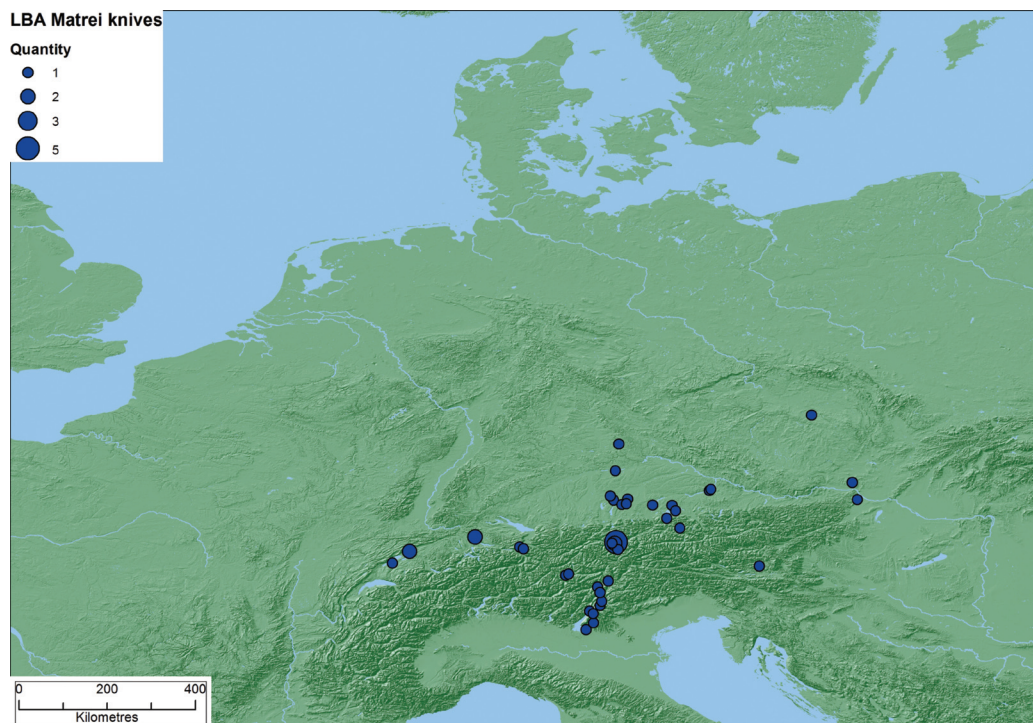


Figure 8.6. Distribution of Late Bronze Age Matrei type knives (after: Jennings 2013).

1970), and it is possible that they were manufactured in multiple locations. Two forms, which were evidently manufactured in the west of Switzerland (given their high density) and that travelled as far as northern and western France, are the *Corcelettes* and *Mörigen* rings (Fig. 8.5). Although the apparent reduced density of amber in Late Bronze Age burial or hoard contexts from Denmark, where it was primarily used as an exchange object (see Beck and Shennan 1991), provides a caution against interpreting high density areas of specific objects as production zones, ring jewellery (and other bronzework) is not naturally occurring; these objects have to be physically manufactured and higher occurrence can be anticipated in their area of manufacture. Therefore, it is likely that high densities of manufactured objects in specific regions suggest possible production zones.

In contrast to the apparent ‘export’ of ring jewellery from the lake-dwelling communities, relatively few pieces seem to have been ‘imported’. A few *Vénat* type rings, synonymous with the large metalwork hoard at Vénat (Saint Yrieix, France (Coffyn *et al.* 1981)) are recorded from western Switzerland (Pászthory 1985), including at the lake-dwellings of Geneva-Eaux Vives (Lake Geneva) and Nidau (Lake Biel). *Auvernier*, *Corcelettes* and *Balingen* rings in the hoard at Vénat suggest that these sites, and others in western Switzerland, were connected in a far reaching east-west exchange system (Coffyn *et al.* 1981).

Other forms of bronzework show a similar involvement of the lake-dwelling communities

in exporting a large quantity of objects, but importing relatively few. For example, the so-called *Pfahlbaulanzen* ('lake-dwelling spears') are, as their name suggests, recorded extensively within the lake-dwellings of Switzerland (Jacob-Friesen 1967; Tarot 2000), but are also well represented in Denmark and northern Germany (Jacob-Friesen 1967; Kristiansen 1998). In contrast, few 'foreign' spearheads are recorded from the lake-dwellings, with two exceptions being a *West-Baltic* type from Grandson-Corcelettes and a *Vénat* type from Auvernier-Bréna (HaB1) (Tarot 2000).

Knives have been classified under different typological schemes in Switzerland compared to other regions of Europe (*e.g.* Rychner 1979; Bauer *et al.* 2004), which makes a direct comparison more difficult than for other forms of bronzework. Many of the spiked- and tanged-handle forms from Switzerland show similarities to others found across Europe, particularly the *Baumgarten* type (Hohlbein 2008; Prüssing 1982; Říhový 1972) (Fig. 8.1.b, c). Some forms are classified in the same typological systems, such as socketed knives (*Tüllenmesser*), 'Fantasy handle' knives (*Phantasiemesser*), and the *Matrei* type, illustrating the involvement of the lake-dwellings in both intra- and inter-regional exchange systems. *Matrei* type knives from Estavayer-le-Lac (Vogt 1952; Bernatzky-Goetze 1987) and Zurich-Alpenquai (Mäder 2001a) are further indications that these settlements were connected to an intra-regional exchange system, linking east and west Switzerland to northern Italy, Austria, and southern Germany (Fig. 8.6) during the early LBA (BzD-HaA) (Hohlbein 2008; Bianco Peroni 1976; Říhový 1972). Socketed and *Phantasie* knives of the later LBA show a dominant distribution in the lake-dwelling region of western Switzerland and eastern France (particularly Lake Bourget) and in the north of Europe. However, the routes that these two knife types may have travelled appear significantly different, with socketed knives, found frequently in the Netherlands (where local manufacture may also have occurred (see Butler *et al.* 2012)), following a more westerly route than the *Phantasie* type, which is found more frequently in eastern central Europe (Fig. 8.7) (Hohlbein 2008; see Jockenhövel and Smolla 1975).

The knife varieties found in the northern Alpine region lake-dwellings show a similar pattern to that seen in other material culture, *e.g.* amber and glass beads, ring jewellery and spearheads, with some interaction and exchange links to northern Italy, but more prominent links to central Europe. Interaction with northern Italy is further suggested through the occurrence of several fibula types, for example *Mörigen* and *Wollishofen* and simple torsion arch fibulae, at Mörigen, Zurich-Wollishofen and Zug-Sumpf respectively, which show good comparison to many Late Bronze Age fibulae in the Po Plain and southern Alpine valleys (Betzler 1974; Eles Masi 1986). A single *Platten* (plate) fibula from Grandson-Corcelettes lies well outside of their main distribution in northern Europe, and when combined with the *West Baltic* spearhead and a *hanging vessel/belt box* decorated with Nordic style motifs from the same lake-settlement (Sprockhoff 1966; Sprockhoff and Höckmann 1979), provides a strong indication of communication routes extending to northern Europe.

In opposition to these objects which travelled over long distances, razors evidently circulated across short distances during the Bronze Age, with specific styles (based on shape and handle attachment) being common in various regions (Jockenhövel 1980; Jockenhövel 1971; Bianco Peroni 1979). The majority of LBA (HaB) razors recorded from the northern

Circum-Alpine region are single-sided, trapezoid and half-moon in shape, with tangs or spikes for handle attachment; quite different from 'Villanovan' lunate razors with cast handle or eastern European quasi-lunate razors with handle, such as the *Herrnbaumgarten* type (Fig. 8.1.d, e, f). Both *Villanovan* style and *Herrnbaumgarten* razors are recorded from the lake-dwelling region, the former at Möriken (Pászthory 1985) and the latter not in a lake-settlement, but a burial from the Alpine Rhône valley at Chelin/Lens (Jockenhövel 1971).

Finally, unique or unusual objects in the lake-dwellings attest to further sporadic interaction with both northern Europe and northern Italy. For example a horse-shaped cheek piece (part of a horse harness) from Zurich-Alpenquai (Mäder 2001a) has most affinities with horse-gear from the Italian peninsula (see Von Hase 1969), and fragments of sheet bronze vessels and funnel-like needles (*Stangentrichter*) from Zurich-Wollishofen and Zurich-Alpenquai are similar to objects found in southern Germany and the Carpathian Basin (Mäder 2001a; Primas 2004). The sheet bronze pieces may indicate the movement of fragmentary bronzework on a commodity basis as material of prime value and recyclability, but the *Stangentrichter* and horse-shaped cheek piece appear to have been circulated as objects, and dismantled prior to deposition (assuming that the cheek piece had actually been used as harness equipment).

Detecting cultural variations

The use of distribution and density maps indicates objects which travelled across Bronze Age Europe in systems of long- and short-distance exchange networks, but they do not provide evidence of the cultural and social effects of participation in such exchange networks. To attempt an understanding of such cultural variations a theoretical approach linking objects and exchange interaction to cultural change and development is required. Three principles can be used to address these issues: 1) Relational Theory; 2) Cultural and Object Translation; 3) The Biography of Objects.

Relational theory

Combining the principles of relational theory (see Strathern 1988; Watts 2013) and systems theory, it is possible to consider societies as the culmination of a number of factors, and how they interact (Fig. 8.8). One of the factors to be considered as a formative component of the cultural composition of communities is their interaction with other communities through exchange relationships (Jennings 2012, 2013). The loss or establishment of such relationships may have significant impacts upon the composition of society, especially if they were used as a part of social legitimisation practices (see Helms 1988). If the ability to participate in exchange relationships, and the knowledge of foreign regions and access to products that this would provide, were used as methods of supporting, legitimising, and perpetuating the social status of community members, a change to such interaction practices would require modification of other social structures to fulfil such functions. For example, a loss of trade partnerships and the social status that they provided, potentially hereditary based on the transfer of knowledge between generations, could have been replaced by an expansion of the burial ritual to express

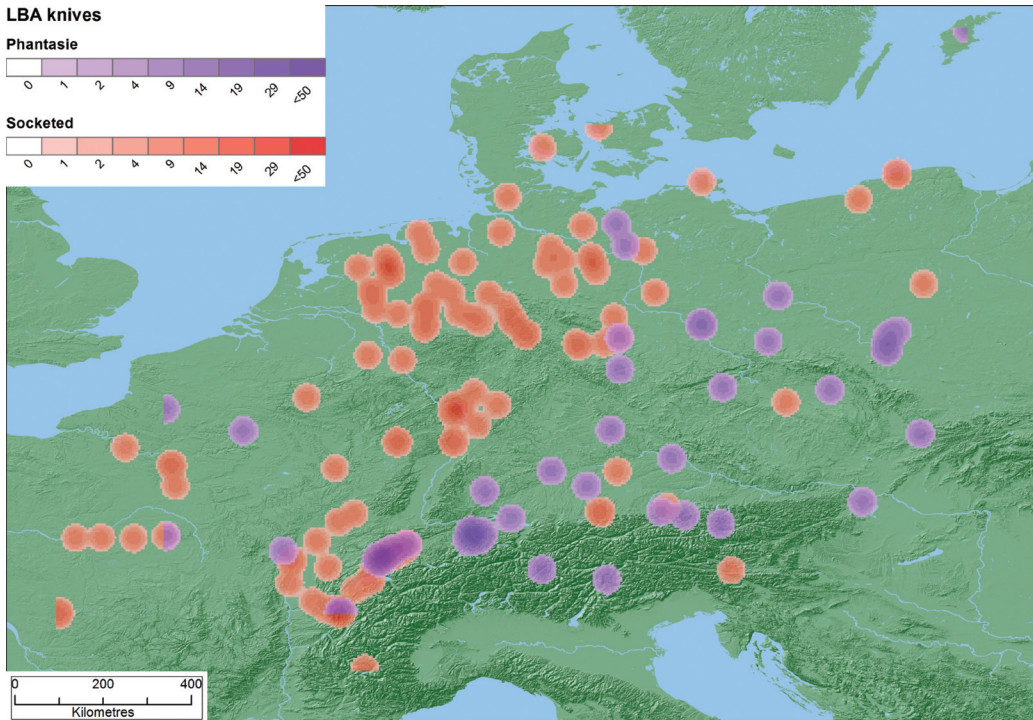


Figure 8.7. Density distribution of Socketed and Phantasie handle knives (after: Jennings 2013).

hereditary links and ancestral rights. Of course, the opposite situation could also induce social changes, with new interaction routes and exchange goods creating opportunities for social display, but in this situation the exchange objects may have been directly appropriated by the elite members of society involved in trade partnerships.

It is also possible to follow the more traditional object focus of Strathern's (1988) and Gell's (1998) approach, under which artefacts and humans can be seen as becoming intertwined through their use and circulation. This may have resulted in the circulation of objects as *gifts* between elite members of communities, with the exchange act becoming a significant part of an object's value. Such practices are hinted at through the circulation of 'Brotlaibidole' during the Early Bronze Age (mainly found in northern Italy, Croatia, and Austria, but several examples from Lake Constance (Köninger and Schlichtherle 2001)) which have been interpreted as a form of trade marker, with the object deliberately fragmented at the conclusion of an exchange partnership (Trnka 1992).

Cultural and object translation

The acceptance of new or 'foreign' styles of material culture was dependent upon the successful translation of objects into their new cultural setting (see Maran 2013). This could

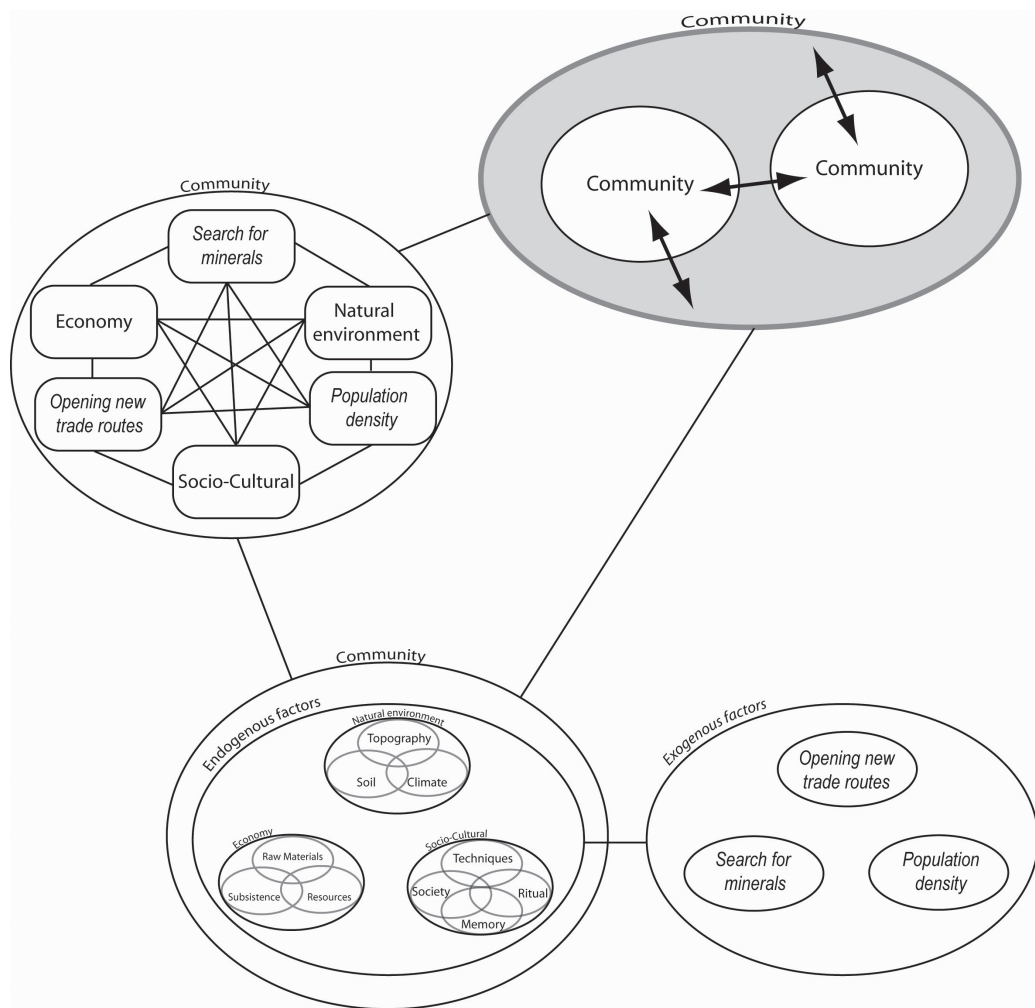


Figure 8.8. A relational model of communities. The cultural composition of communities can be seen not only as the composite of multiple endogenous and exogenous factors (lower section), but also the result of the interaction of those factors (middle sphere), and the interaction of communities with each other (upper sphere) (after: Jennings 2012).

have been achieved either through 'importive translation', where the individuals responsible for trade and exchange interaction – usually seen as elite members of society (see Helms 1988) – used their position to generate locally specific meaning for imported objects, or by 'productive translation' under which objects were given meanings through replication and emulation in new locales (see Jennings 2013–2014b).

There are many examples of successful object translation throughout Europe and the lake-dwelling region – as indicated by the occurrence of quantities of 'foreign' objects in various regions – and a good example is the *Pfahlbauperlen* ranging from the Italian

peninsula to northern Germany but with different value associations (see below). But the northern Alpine region also shows indications of failed translation or object rejection. At two sites, Hauterive-Champréveyres and Montlingerberg (hilltop settlement in the Rhine Valley, Canton St Gallen, Switzerland), *Allumiere* type amber beads have been recovered. These beads are primarily recorded in the Mediterranean region and the Italian peninsula, with the two sites north of the Alps being distinct outliers in the distribution (Negroni Catacchio 1999; Rychner-Faraggi 1993; Steinhauser and Primas 1987; Jennings 2014b). Both of these settlements show other indications of involvement in exchange networks with northern Italy, particularly the *Pfahlbauperlen* at Hauterive-Champréveyres and inner Alpine ceramics at Montlingerberg. Despite these connections, and the apparent ready translation and acceptance of the *Pfahlbauperlen*, the *Allumiere* beads (which were also manufactured in the Po Plain at Frattesina and Gignano (Negroni Catacchio 1999; Salzani 2009)) were not widely incorporated into society, or passed on to other communities north of the Alps. If there was sufficient desire in these settlements to utilise the *Allumiere* form, more could have been imported (as many *Pfahlbauperlen* were) or even manufactured locally from amber being circulated towards northern Italy. The fact that neither of these occurred indicates the failure to translate these objects into local relevance north of the Alps.

The Biography of Objects

One way to observe the changes that occur in society as a result of a re-organisation of various factors is through a broad study of material culture – not only the traditional interpretation as portable objects, but as immoveable features such as settlement form, construction techniques and funerary practices. Observing changes in the treatment of objects – or reconstructing an objects biography – illuminates changing cultural attitudes towards the value and significance of specific forms of material culture (e.g. Appadurai 1986; Gosden and Marshall 1999). This comparison can occur across both time and space, with changing value associations observed between different regions as objects were circulated, or within a specific region over successive time periods. A good example of the changing status of a single category of object can be seen in the use of amber in Denmark during the Neolithic and Bronze Age; initially used as a status indicator in burials, the material subsequently became a trade commodity used to acquire other prestige objects (bronzework) from the south (see Beck and Shennan 1991).

The biographical approach can be used to address both groups of objects/artefacts, for example amber as a material or arm-rings as an object class, to observe an ‘idealised biography’, or specific and ‘individualised’ objects which have been removed from the normal biographical cycle and diverted into new value regimes (Kopytoff 1986); for example several razors manufactured from arm-rings known from Switzerland (Jennings 2014a). In the case of ‘idealised biographies’, object groups are treated as a whole and the changing value of objects is generalised from multiple sources of evidence. For example, the social biography of arm-/leg-rings could be seen as a general progression from bronze stock commodity, to production of the ring-jewellery as either commodity or social object, to probable use as social identifier and display object during specific social events, before

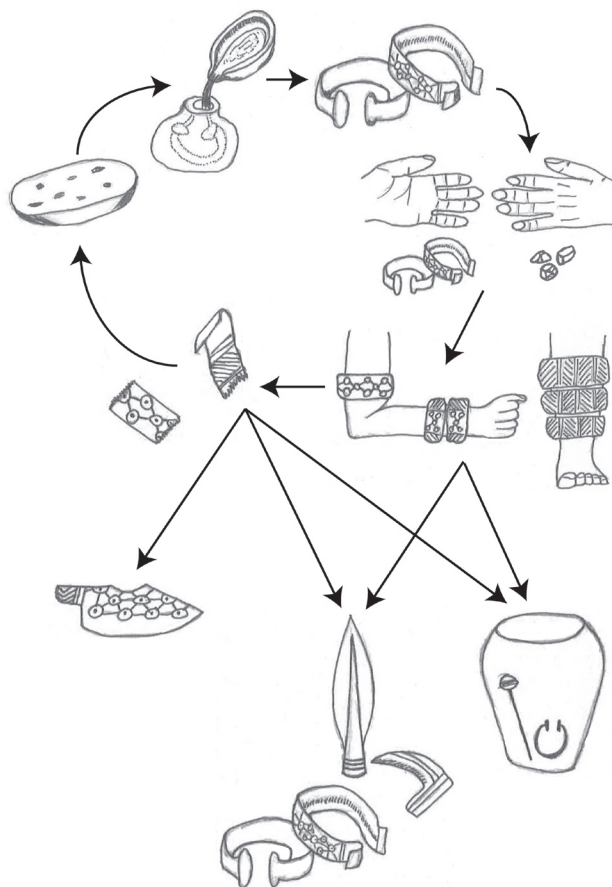


Figure 8.9. Hypothesized biography of Late Bronze Age arm- and leg-rings in the northern Circum-Alpine region. Initial production of the ring began with a bronze ingot, which was melted and cast as a piece of ring-jewellery. This would have effectively represented a commodity to the bronze worker who could 'sell' or exchange it with the commissioner or customer. It could then be further exchanged as a commodity of gift, but would eventually end up being worn and used as a social and status identifier during daily life or special events. Some rings were effectively retained by their owner during death, with their inclusion in the burial ceremony affirming their use as personal identity or status identifiers. Other rings were deposited in hoards, and might represent more communal identities. Finally, some rings were intentionally broken, and some of the fragments from this process may have been recycled by bronze smiths, but other parts may have been converted to new objects and used as mnemonic devices in a process related to the biography and social identity of their owners.

deposition in burial or hoard assemblages. In contrast, 'individualised' biographies address the biography of specific objects, observing how they were manipulated and extracted from the standard pathway for their object class – for example the ring-razors were diverted from the normal deposition practice for arm-rings and converted into new objects, extending their use life and diverting them into new value associations (Fig. 8.9).

The significance of exchanged goods

How imported objects were valued, and the significance that they assumed in their new cultural locales may be demonstrated by the contexts in which they were deposited. Of course, single items deposited in locations significantly removed from their main area of distribution may indicate the movement of individual people rather than the gift or commodity exchange of objects (see Jockenhövel 1991). For instance, the single *Herrnbaumgarten* razor from Chelin/Lens has been interpreted as the burial of a migrant individual (Nicolas 2003), and the small collection of Nordic style objects (*Platten* fibula, *West Baltic* spearhead, hanging vessel) from Grandson-Corcelettes may be the result of specific relocation. However, the placement of the *Herrnbaumgarten* razor in a burial is a significant divergence from the local deposition trends for razors, with very few being recorded from such contexts in Switzerland (see Jockenhövel 1971). This suggests that either other (surviving) members of the community knew of the practice for depositing *Herrnbaumgarten* razors with the deceased owner (typical practice in their main area of distribution in east-central Europe and also northern Italy (Jockenhövel 1971; Weber 1996; Gedl 1981; Bianco Peroni 1979)) and carried out such deposition, or that the placement of the razor in the burial with the 'migrant' was a convenient way of removing a 'foreign' object from the local cultural milieu.

When objects were repeatedly incorporated into the material culture assemblage of new cultural locales, it may be possible to observe changing value associations and social functions for the imported objects through their deposition contexts and associated items. The use of Multiple Correspondence Analysis (MCA) (Shennan 2006) privileges an insight to how values associated with specific objects changed as they were used in different regions, through visualizing how similar/dissimilar collections are based upon the categories of objects included (see Jennings 2013). Unfortunately, this is not always possible with material recorded from lake-dwellings, as many objects are simply documented as coming from a 'lake-settlement' without further contextual information. However, excavations in the latter half of 20th century recognised structured hoard deposits within these settlements, e.g. at Auvernier-Nord (Rychner 1987), and recently many objects from western Switzerland have also been re-assessed in an attempt to observe deposition patterns (Fischer 2012). A minority of the material culture finds recorded from the lake-dwelling areas of the northern Alpine region are known from burial contexts, which provides an opportunity to compare directly the deposition contexts of goods circulated between different regions of Europe.

One of the best objects to perform such analysis is the *Pfahlbauperlen*, found in burials from the Italian peninsula to northern Germany (Fig. 8.10). Burials containing these beads in Italy replicated the same associations many times, indicating a consistent deposition assemblage and value association in what are typically interpreted as female burials (e.g. Osteria dell'Osa (e.g. Bietti Sestieri 1992)). Moving north of the Alps, in burials at Le Boiron (Beeching, 1977) and Vidy Chavannes, these beads (possible fragments at Vidy) are associated with few other objects, but at Vidy occur in the cremation of a male individual (Kaenel and Klausener 1990; Moinat and David-Elbiali 2003). Travelling further north through Europe the beads were often deposited in both hoard and burial assemblages,

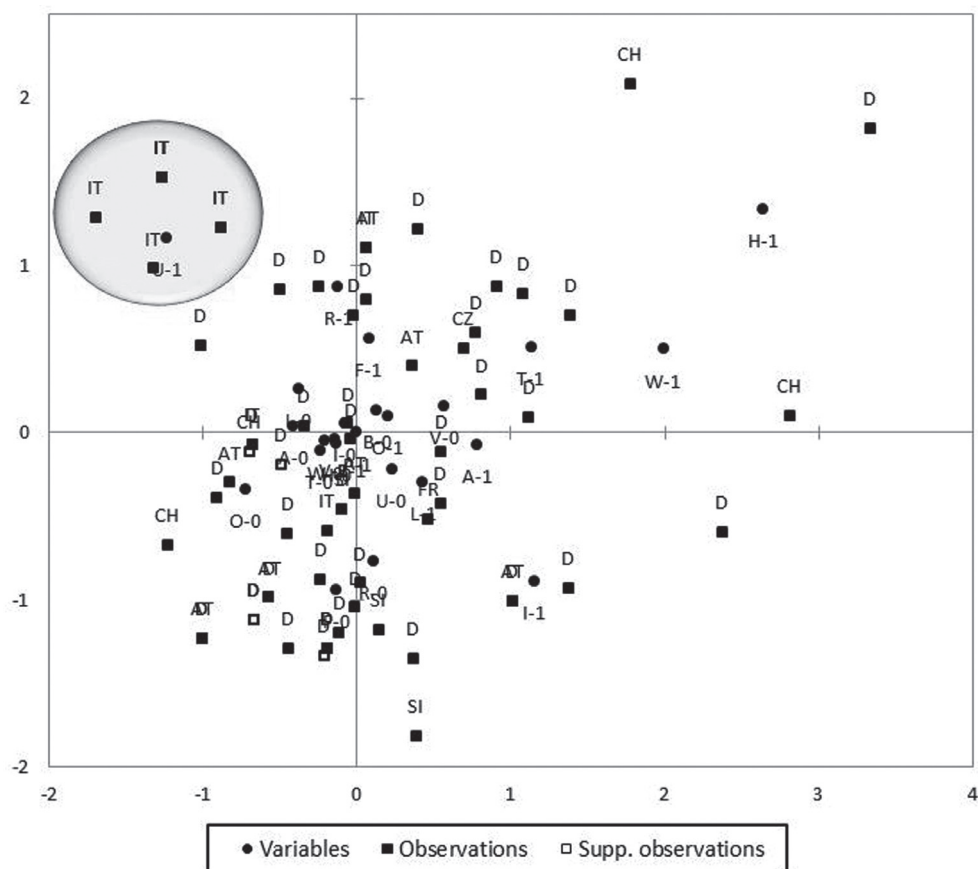


Figure 8.10. Multiple Correspondence Analysis (MCA) plot of assemblages (Observations) containing Pfahlbauperlen from different areas of Europe. A cluster of assemblages from Italy is clearly evident in the upper left, indicating that the assemblage are relatively similar in composition (based on other objects found in the assemblages; Variables). Other regions show less clustering reflecting a rather diverse deposition practice, but distinctly different from that employed in Italy. Observations labels: AT = Austria; CH = Switzerland; CZ = Czech Republic; D = Germany; FR = France; IT = Italy; SI = Slovenia (data after: Jennings 2013).

frequently with large ring jewellery and needles, but rarely with weapons or domestic production objects, such as spindle whorls. The cultural translation of these beads into areas north of the Alps resulted in their conversion from foreign objects with typically female associations, to high status objects of mixed gender symbolism, for deposition in locally specific manners: the beads' value did not travel with them, but was recreated and re-contextualised at various points along the exchange route (Jennings 2013–2014b).

The Pfahlbau and West Baltic type spearheads also provide a good opportunity to observe changing value associations. Again, direct comparison with the lake-dwelling

region is difficult because few of the spearheads are recorded with associated objects, but it is possible to compare both forms in regions of northern Europe. It is evident from these depositions that the *West Baltic* and *Pfahlbau* spearhead were, to some extent, used interchangeably: sometimes the imported form was used in place of a local type, for example in hoard assemblages at Spelvik, and Ekes (both in Sweden) and Kølpenngård (Denmark) (Jacob-Friesen 1967). A number of the *West Baltic* spearheads in northern Europe are placed in hoards containing hanging vessels and/or *Platten* fibula (e.g. Grönhult (Sweden), Hindenburg (Germany), Hyldtoft (Denmark) (Jacob-Friesen 1967)), and it is interesting to note that the hanging vessel assemblage from Grandson-Corcelettes contained a local *Pfahlbau* type spearhead (Fischer 2012), even though a *West Baltic* type is known from the same settlement. These objects were successfully translated to the extent that they became interchangeable despite different production zones (Jennings 2013, 2014b).

How significant the exchanged objects became in their new cultural setting is uncertain; once objects were successfully translated into the material culture assemblage of the importing regions they were assigned significance through their incorporation. Whether or not the objects continued to retain 'foreign' associations is somewhat irrelevant because they had become a local product through use and assimilation, even though their 'foreignness' may have been exploited as symbols of prestige and resulted in restriction of use through forms of sumptuary laws (see Helms 1988). Furthermore, the incorporation of 'foreign' objects did not necessarily equate to the adoption of cultural aspects along with material culture, as clearly demonstrated by the deposition practices for, and value associations of, *Pfahlbauperlen* in their region of manufacture compared to regions of import. The process of translation created new meanings, values, and use practices for material culture objects as they travelled between regions, incorporating them into existing cultural settings rather than importing objects with a 'cultural package'.

The adoption of social attitudes along with objects, as opposed to cultural translation, is suggested by several weights from LBA (HaA and HaB period) lake-dwellings in the northern Alpine forelands (for instance Auvernier, Grandson-Corcelettes, ~~and~~ Mörigen, Zurich-Alpenquai and Zurich-Wollishofen) directly related to those used in settlements of the Po Plain. Some of these weights have been classified as *terramare* type and others as *Pfahlbau* type depending upon their mass (and divisions/multiplications thereof), which ranges between 0.1 and 1.0 kilos with a cluster at c. 0.7–0.8 kg (Pare 1999). It is not clear what these objects were used to weigh, but given their relatively low mass, it is possible that they were used for the exchange of objects rather than in manufacturing processes (Pare 1999). More significantly, the occurrence of *terramare* type weights in both the Po Plain and lake-dwellings north of the Alps may indicate a transfer of trade concepts between the two regions, with an increasing commoditisation of exchange relationships (Pare 2013, see also Renfrew 2005). It is important to note that these are not the first or only weights recorded from Europe north of the Alps, and there are instances known relating to early LBA (BzD) contexts, for example from a cemetery at Wangen an der Aare (Switzerland) (Pare 1999). However, the later examples are significantly heavier than the earlier ones (e.g. Wangen an der Aare = 0.013 kg), indicating that they were intended for use with larger quantities of, or heavier, objects. Assuming a pragmatic trade function rather than a symbolic one, it is

possible to suggest that attitudes towards object value and commoditisation were directly transformed in the lake-dwelling communities due to their trade and communication relationships with settlements in the Po Plain.

Such direct indications for social development as a result of exchange relationships are relatively rare, and of greater concern to the consideration of cultural change is the significance that involvement in trade and exchange relationships had on communities. Under the Relational model proposed above, the involvement (or not) of communities in exchange partnerships may have influenced the cultural constitution of those societies. When participation in exchange networks remained stable, cultural variations would have been initiated through other social aspects and would have been largely unaffected by the trading activities. Exchange objects, varying over time, would have been translated and incorporated for use in social functions, and may have been used in manners of social expression different to their production use. However, changing participation in trade and exchange practices could have led to significant social disruption, especially if the ability to participate in exchange, and to acquire the materials that circulated, was used as a method of social stratification, status identification, and/or legitimisation.

Indications for social change during the Late Bronze Age as a result of trade and interaction are possibly seen in the occurrence of a number of 'keys' at lake-settlements (e.g. Mörigen, Zurich-Alpenquai, Zurich-Wollishofen), and also at a 'highland' settlement (Montlingerberg) on the north-south trade route. Although it is not proven that these objects were definitely 'keys', it is generally accepted that this is one of the most likely functions for the objects, and iconographic representation from ancient Greek ceramics shows similar items in use (Speck 1981). It is unclear whether these objects are directly related to the involvement of the settlements in exchange relationships, but it is evident that they are only recorded from sites supposedly incorporated to long-distance trade routes. Several of these keys have plastic bird decoration, which has led to suggestions that they were 'ritual' equipment (Van Willigen, 2011), but more interesting is the termination of many of them in rings, which suggests that they were intended to be displayed, possibly hung from clothing or belts. In this context keys could have been used to symbolise, and demonstrate through display, the ability to control access to structures and the contents stored therein.

The distribution of various forms of Late Bronze Age and early Iron Age material culture in Switzerland, eastern France and southern Germany indicate a slight reorganisation of the trade routes flowing through the northern Alpine forelands during the 9th century BC (HaB3). The distribution of various types of Late Bronze Age swords, particularly Mörigen but also Tarquinia, Tachlovice, and Weltenburg swords, demonstrate the dominance of the lake-dwellings in the vicinity of Lake Neuchâtel in the circulation of these items, and an extension of their use into the Rhône valley (Fig. 8.11). The Gündlingen type sword, relating to the beginning of early Iron Age (early 8th century BC; HaC) circulated shortly after Mörigen type, but is extremely uncommon in the region of Lake Neuchâtel, and Switzerland in general, with only two examples recorded (at Font and Sion (Cowen 1968)). However, elsewhere in Europe, particularly southern Germany and the Rhône valley, these swords show a similar distribution pattern to the Mörigen type (Fig. 8.11).

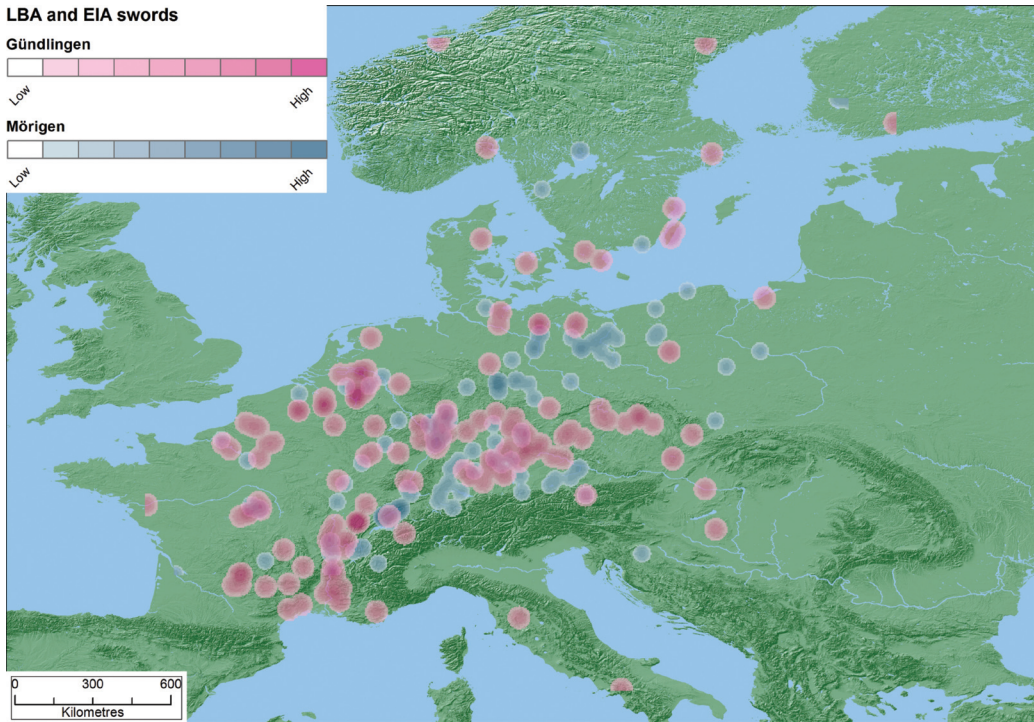


Figure 8.11. Comparative distribution of Late Bronze Age (LBA) Möriegen type swords and early Iron Age (EIA) Gündlingen type swords. The two types are relatively similar in their distribution, except for a distinct density reduction in the region of Lake Neuchâtel, representing the reduced involvement of the region in long-distance exchange networks during the early Iron Age (after: Jennings 2013).

This reduced involvement of the former lake-dwelling regions in inter-regional exchange networks of the early Iron Age is indicated through other objects, particularly arm- and leg-ring jewellery. Instead of continuing as the significant manufacturing centre that it had been during the Late Bronze Age (as suggested by the distribution of, amongst other objects, arm-/leg-ring and knife types), western Switzerland appears to have been relatively restricted in the circulation of these goods during the early Iron Age (see Schmid-Sikimić 1996). During the short period of time between the decline of the circulation of Möriegen swords (HaB3) and height of use of Gündlingen swords (early HaC (see Harding 2000; Fontijn 2002)), the region was apparently disassociated from the main trade and exchange networks that linked southern Germany to the Rhône valley. For later stages of the Iron Age (e.g. HaD) the region appears to have been re-integrated to wider exchange networks with southern Germany, eastern France, and northern Italy, as evidenced by wider distributions of daggers (Sievers 1982), ring jewellery (Schmid-Sikimić 1996), fibulae (Primas 1970; Lüscher 1991), and later ceramics (Guggisberg 2011).

The significance of these objects is not as great as the significance of the involvement of

the region in exchange networks, and the changes that may have been induced by restricted access to those networks. It is unclear whether the lake-dwellings were abandoned before the movement of trade routes away from Lake Neuchâtel to a more westerly Rhône-Saône route or vice-versa, but it is clear that by the time *Gündlingen* swords were widely utilised the region was largely circumvented. This may have led to a re-organisation of social structures to provide new arenas of elite legitimisation, potentially including a return to significant emphasis on the burial rite as an expression of social status (see Lüscher 1993; Lüscher and Müller 1999), and the establishment and occupation of settlements in visible hilltop locations to provide a visible presence in the landscape, and as an overt display of the ability to consume labour, resources, and coordinate the construction of such settlements. The beginning of the Iron Age was defined by cultural changes and social developments across a wide area of Europe, but the impetus for change should not be seen as universal. In the northern Alpine region, the Iron Age Hallstatt period can be seen as a development of the preceding Urnfield tradition (see Cunliffe 2008), but different influences for cultural variation would have occurred even within this zone; particularly in the former lake-dwelling region where the burial practice of the lake-dwellers remains largely unknown.

Cultural contact or just travelling objects ... or both?

From the above discussion it is clear that during the Bronze Age exchanged goods were never just *travelling objects*, or solely about the movement of goods and materials from one region to another. Cultural contact was an inherent part of the exchange practices, and resulted in the transfer of ideas, techniques, beliefs and practices along with the material goods. However, it was only through the process of *translation* and a redefinition of social value that any objects, or co-travelling aspects, were incorporated into new cultural locales. By the time *translation* had occurred, the socially relevant acts had already taken place: cultural contact had already happened, exchange partnerships had been created, objects had been re-contextualised to a local setting, and social changes may already have been initiated.

The occurrence of weights can provide direct indications of cultural changes related to the involvement of communities with exchange networks. These changes were not related to the modification of social structures, but to the valuation of objects and basic concept of trade. Instead of circulating objects on a gift basis or as fragmented bronze stock (*e.g.* sickles), it was possible to equate items to each other based on their mass; objects became commoditised with exchange values based upon weight or volume rather than social values based on concepts of prestige or biographies (see Renfrew 2005). Furthermore, the move to commoditisation and exchange of objects by mass suggests that trade was conducted on the basis of immediate return, with interactions being commenced and completed on a single occasion. This would liberate exchange participation from the domain of selected individuals possessing the correct trading partners to a more 'freelance' basis, under which traders were able to interact with various regions and communities, and also remove the need to exchange-partnership markers such as the *Brotlaibidole*. Such a development could have been of great benefit to the lake-dwelling communities, which evidently formed a significant manufacturing centre circulating objects to other parts of central Europe (for

example ring jewellery, spearheads and knives), in that the items they produced could be easily exchanged with communities in both short- and long-distance interactions.

Keys provide further indications of changing social structures at some of the sites involved with long-distance exchange relationships in the northern Alpine forelands. These objects may have been utilised as indicators of social status and the ability of individuals to control access to specific buildings within settlements. Their status as 'key holders' may have been generated or legitimised through the control and manipulation of exchange relationships to bring exotic and mundane goods into the community, but also reflects an increasing hierarchisation of society during the LBA based on a principle of access, and a social need to secure specific buildings. The fact that many keys (26 items from 8 sites (Jennings 2013; Speck 1981)) are known from lake-settlements is interesting because these sites typically show no social stratification based on structure size, orientation, or position, and the burial practices of these communities remain relatively unknown. Involvement in exchange networks may have been one of the factors influencing social status, and also provided the means of expressing that status through the display of 'foreign' objects or equipment.

The distribution of many forms of material culture demonstrates that the lake-dwelling communities, especially of western Switzerland and eastern France, were well connected to those of southern and western Germany, and particularly the region around Mainz and Frankfurt. Exchange relationships between the lake-dwellings and northern Italy are observed through several types of object, including jewellery beads and fibulae, but their connection does not appear to have been as intense as that to northern Europe. Furthermore, items were not universally translated and accepted into the material culture repertoire of the northern Alpine communities, as demonstrated by the limited distribution of the *Allumiere* amber beads. For *translation* to occur there needed to be a combination of desire for the objects, a function for them to fulfil in social practices, and a relevance to the existing cultural milieu; the *Pfahlbauperlen* as novel objects and symbols of foreign connections fulfilled these criteria, whereas the *Allumiere* amber beads, being made of a material already present in society which could have been worked locally, and already symbolising foreign connections to the north of Europe, did not.

The circulation of various material culture objects not only moved the objects themselves, but also ideas and techniques. Yet, the cultural contact required to initiate the movement of goods did not result in the 'diffusion' of culture from one participant region to the other through traditional interpretations of 'acculturation'. Rather, communities *translated*, re-contextualised, and incorporated sections of the material culture and social practices that they desired to form specific functions in their cultural model. The incorporation of travelling objects was not as significant for cultural variation as the actual cultural contact and participation (or not) in exchange networks which permitted the movement of those objects. Not because of 'acculturation' processes, but expanding or reducing contact and exchange relationships may have induced endogenous social and cultural change related to the control of resources, access to materials, and, ultimately, expressions of social status.

References

- Angelini, I., Artioli, G., Bellintani, P., Diella, V., Gemmi, M., Polla, A. and Rossi, A. (2004). Chemical analyses of Bronze Age glasses from Frattesina di Rovigo, Northern Italy. *Journal of Archaeological Science* 31: 1175–1184.
- Angelini, I. and Bellintani, P. (2005). Archaeological ambers from Northern Italy: An FTIR-Drift study of provenance by comparison with the Geological Amber Database. *Archaeometry* 47: 441–454.
- Angelini, I., Polla, A., Giussani, B., Bellintani, P. and Artioli, G. (2009) Final Bronze-Age glass in Northern and Central Italy: is Frattesina the only glass production centre? In J.-F. Moreau, R. Auger, J. Chabot and A. Herzog, (eds) *Proceedings of the 36th International Symposium on Archaeometry, 2006 Quebec City*: 329–337. Quebec: CELAT.
- Appadurai, A. (ed.) (1986) *The social life of things : commodities in cultural perspective*, Cambridge: Cambridge University Press.
- Bauer, I., Ruckstuhl, B. and Speck, J. (2004) *Zug-Sumpf: Die Funde der Grabungen 1923–37*. Zug: Kantonaes Museum für Urgeschichte.
- Beck, C. W. and Shennan, S. J. (1991) *Amber in prehistoric Britain*. Oxford: Oxbow Monograph.
- Beeching, A. (1977) *Le Boiron: une nécropole du bronze final près de Morges (Vaud, Suisse)*. Lausanne: Musée d'archéologie et d'histoire.
- Bellintani, P. (1997) Frattesina: l'ambra e la produzione vitrea nel contesto delle relazioni transalpina. In L. Endrizzi and F. Marzatico (eds) *Ori delle Alpi*: 117–129. Trento: Servizio beni culturali Provincia autonoma di Trento.
- Bellintani, P. (2002) Bernsteinstraßen, Glasstraßen. In G. Schnekenburger (ed.) *Über die Alpen: Menschen – Wege – Waren*: 39–48. Stuttgart: Theiss.
- Bellintani, P. and Stefan, L. (2009) Nuovi dati sul primo vetro Europeo: il caso di Frattesina. In A. Magna, (ed.) *Atti del primo convegno interdisciplinare sul vetro nei beni culturali e nell'arte di ieri e di oggi, 2008 Parma*: 71–86. Parma: Belling Anti Publisher.
- Bernatzky-Goetze, M. (1987) *Möriren : die spätbronzezeitlichen Funde*. Basel: Verlag Schweizerische Gesellschaft für Ur- und Frühgeschichte.
- Betzler, P. (1974) *Die Fibeln in Süddeutschland, Österreich und der Schweiz I : (urnenfelderzeitliche Typen)*. Prähistorische Bronzefunde: 14/-3. München: Beck.
- Bianco Peroni, V. (1976) *Die Messer in Italien*. Prähistorische Bronzefunde: 7/2. München: Beck.
- Bianco Peroni, V. (1979) *I rasoi nell'Italia continentale*. Prähistorische Bronzefunde: 8/2. München: Beck.
- Bietti Sestieri, A. M. (ed.) 1992. *La necropoli laziale di Osteria dell'Osa*, Roma: Quasar.
- Braccisi, L. (2004) The Greeks on the Venetian lagoon. In K. Lomas and B. B. Shefton (eds) *Greek identity in the western Mediterranean papers in honour of Brian Shefton*: 349–361. Leiden: Brill.
- Butler, J. J., Arnoldussen, S. and Steegstra, H. (2012). Single-edged socketed Urnfield knives in the Netherlands and western Europe. *Palaeohistoria* 2011/2012: 65–107.
- Coffyn, A., Gomez, J. and Mohen, J.-P. (1981) *L'apogée du bronze atlantique : le dépôt de Vénat*. Paris: Picard.
- Cowen, J. D. (1968) The Hallstatt Sword of Bronze: on the Continent and in Britain. *Proceedings of the Prehistoric Society* 33: 377–454.
- Cunliffe, B. W. (2008) *Europe between the oceans: themes and variations 9000 BC-AD 1000*. New Haven: Yale University Press.
- De Navarro, J. M. (1925). Prehistoric Routes between Northern Europe and Italy Defined by the Amber Trade. *The Geographical Journal* 66: 481–503.
- Della Casa, P. (2002) *Landschaften, Siedlungen, Ressourcen : Langzeitszenarien menschlicher Aktivität in ausgewählten alpinen Gebieten der Schweiz, Italiens und Frankreichs*. Montagnac: Monique Mergoïl.

- Eles Masi, P. v. (1986) *Le fibule dell'Italia settentrionale*. Prähistorische Bronzefunde: 14/-5. München: Beck.
- Fischer, V. (2012) *Les bronzes en contexte palafittique sur les rives du Léman et des Trois-Lacs (Suisse occidentale)*. Lausanne: Musée cantonal d'archéologie et d'histoire.
- Fontijn, D. R. (2002) *Sacrificial landscapes : cultural biographies of persons, objects and 'natural' places in the Bronze Age of the southern Netherlands, c. 2300–600 BC*. Leiden: University of Leiden.
- Gedl, M. (1981) *Die Rasiermesser in Polen*. Prähistorische Bronzefunde: 8/-4. München: Beck.
- Gell, A. (1998) *Art and agency : an anthropological theory*. Oxford: Clarendon Press.
- Gosden, C. and Marshall, Y. (1999) *The cultural biography of objects*. London: Routledge.
- Guggisberg, M. (2011) La ceramica greca a nord delle Alpi. Contesto e fusione. In F. Marzatico, R. Gebhard and P. Gleirscher (eds) *Le grandi vie delle civiltà : relazioni e scambi fra Mediterraneo e il centro Europa dalla preistoria alla romanità*: 227–228. Trento: Castello del Buonconsiglio.
- Haevernick, T. E. (1978). Urnenfelderzeitliche Glasperlen. *Zeitschrift für Schweizerische Archäologie und Kunstgeschichte* 35: 145–157.
- Harding, A. F. (2000) *European societies in the Bronze Age*. Cambridge: Cambridge University Press.
- Helms, M. W. (1988) *Ulysses' sail: an ethnographic odyssey of power, knowledge, and geographical distance*. Princeton: Princeton University Press.
- Henderson, J. (1993) Chemical analyses of the glass and faience from Hauterive-Champgréveyres, Switzerland. In A.-M. Rychner-Faraggi (ed.) *Hauterive-Champgréveyres 9: Métal et parure au Bronze final*: 111–117. Neuchâtel: Musée cantonal d'archéologie.
- Hohlbein, M. (2008). *Die spätbronze- und urnenfelderzeitlichen Bronzemeser im mittleren und südlichen Westdeutschland I*. Doctor of Philosophy, Westfälische Wilhelms-Universität zu Münster.
- Jacob-Friesen, G. (1967) *Bronzezeitliche Lanzen spitzen Norddeutschlands und Skandinaviens*. Hildesheim: August Lax.
- Jennings, B. (2012) When the Going Gets Tough...? Climatic or Cultural Influences for the LBA Abandonment of Circum-Alpine Lake-Dwellings. In J. Kniesel, W. Kirleis, M. Dal Corso, N. Taylor and V. Tiedtke (eds) *Collapse or Continuity? Environment and Development of Bronze Age Human Landscapes. Proceedings of the International Workshop 'Socio-Environmental Dynamics over the Last 12,000 Years: The Creation of Landscapes II'*: 85–99. Kiel: Rudolf Habelt.
- ~~Jennings, B. (2013). *Travelling Objects: Changing Values. Trade, exchange and cultural influences for the decline of the lake dwelling tradition in the northern Circum Alpine region during the Late Bronze Age*. Doctor of Philosophy Doctoral, Universität Basel.~~
- Jennings, B. (2014a). Repair, Recycle or Re-use? Creating mnemonic devices through the modification of object biographies. *Cambridge Archaeological Journal* 24: 163–176.
- Jennings, B. (2014b) *Travelling Objects: Changing Values. The role of northern Alpine lake-dwelling communities in exchange and communication networks during the Late Bronze Age*. Oxford: Archaeopress.
- Jockenhövel, A. (1971) *Die Rasiermesser in Mitteleuropa (Süddeutschland, Tschechoslowakei, Österreich, Schweiz)*. Prähistorische Bronzefunde: 8/1. München: Beck
- Jockenhövel, A. (1980) *Die Rasiermesser in Westeuropa (Westdeutschland, Niederlande, Belgien, Luxemburg, Frankreich, Grossbritannien und Irland)*. Prähistorische Bronzefunde: 8/3. München: Beck.
- Jockenhövel, A. (1991). Räumliche Mobilität von Personen in der mittleren Bronzezeit des westlichen Mitteleuropa. *Germania* 69: 49–62.
- Jockenhövel, A. and Smolla, G. (1975). Le dépôt de Juvincourt-Damary (Aisne). *Gallia Préhistoire* 18: 290–313.
- Kaenel, G. and Klausener, M. (1990). Quelques tombes à incinération du Bronze final (Xe siècle av.

- J.-C.) à Vidy (Lausanne VD). *Jahrbuch der Schweizerischen Gesellschaft für Ur- und Frühgeschichte* 73: 51–82.
- Köninger, J. and Schlichtherle, H. (2001). Foreign Elements in South-West German Lake Dwellings: transalpine Relations in the Late Neolithic and Early Bronze Ages. *Preistoria Alpina* 35: 43–53.
- Kopytoff, I. (1986) The Cultural biography of things: commoditization as process. In A. Appadurai (ed.) *The social life of things: commodities in cultural perspective*: 64–91. Cambridge: Cambridge University Press.
- Kristiansen, K. (1998) *Europe before history*. Cambridge: Cambridge University Press.
- Leuzinger, U. (2000) *Die jungsteinzeitliche Seeufersiedlung Arbon-Bleiche 3. Befunde*. Frauenfeld: Departement für Erziehung und Kultur des Kantons Thurgau.
- Lüscher, G. (1991). Frühkeltische ‘Fürstensitze’ in der Schweiz. *Archäologie der Schweiz* 14: 68–74.
- Lüscher, G. (1993) *Unterlunkhofen und die hallstattzeitliche Grabkeramik in der Schweiz*. Basel: Verlag Schweizerische Gesellschaft für Ur- und Frühgeschichte.
- Lüscher, G. and Müller, F. (1999) Gräber und Kult. In F. Müller, G. Kaenel and G. Lüscher (eds) *Eisenzeit: Die Schweiz vom Paläolithikum bis zum frühen Mittelalter*. 249–282. Basel: Verlag Schweizerische Gesellschaft für Ur- und Frühgeschichte.
- Mäder, A. (2001a) *Die spätbronzezeitliche Seeufersiedlung Zürich-Alpenquai 1: Die Metallfunde: Baggerungen von 1916–1919*. Zürich: Baudirektion Kanton Zürich, Hochbauamt.
- Mäder, A. (2001b) *Zürich-Alpenquai 2: Die Schultergefässe und Kugelbecher: Baggerungen von 1916 und 1919*. Zürich: Baudirektion Kanton Zürich, Hochbauamt.
- Maran, J. (2013) Bright as the sun: The appropriation of amber objects in Mycenaean Greece. In H. P. Hahn and H. Weiss (eds) *Mobility, Meaning and Transformations of Things: shifting contexts of material culture through time and space*: 147–169. Oxford: Oxbow Books.
- Mildner, S., Schüssler, U., Falkenstein, F. and Brätz, H. (2013) Bronzezeitliches Glas zwischen Alpenkamm und Ostsee – erste Ergebnisse einer archäometrischen Bestandsaufnahme. In A. Hauptmann, O. Mecking and M. Prange (eds) *Archäometrie und Denkmalpflege* (Metalla 6, special edition): 246–250. Bochum: Deutsches Bergbau-Museum.
- Moinat, P. and David-Elbiali, M. (2003) *Défunts, bûchers et céramiques: la nécropole de Lausanne-Vidy (VD) et les pratiques funéraires sur le Plateau suisse du XIe au VIIIe s.av.J.-C.* Lausanne: Cahiers d’archéologie romande.
- Murillo-Barroso, M. and Martínón-Torres, M. (2012). Amber Sources and Trade in the Prehistory of the Iberian Peninsula. *European Journal of Archaeology* 15: 187–216.
- Nash Briggs, D. (2003). Metals, Salt, and Slaves: Economic Links Between Gaul and Italy From the Eighth to the Late Sixth Centuries BC. *Oxford Journal of Archaeology* 22: 243–259.
- Negroni Catacchio, N. (1999) Produzione e commercio dei vaghi d’ambra tipo Tirinto e tipo Allumiere alla luce delle recenti scoperte. In O. Paoletti, (ed.) *Protostoria e Storia del ‘Venetorum Angulus’ Atti del XX Convegno di Studi Etruschi ed Italici, 1996 Este*: 241–265. Pisa: Istituti editoriali e poligrafici internazionali.
- Nicolas, I. (2003) Au fil du rasoir: étude des rasoirs métalliques de l’âge du Bronze jusqu’à haut Moyen Age en Suisse. In M. Besse, L.-I. Stahl Gretschi and P. Curdy (eds) *Constellations. Hommage à Alain Gallay*: 273–289. Lausanne: Cahiers d’archéologie romande.
- Palavestra, A. (2007) Was there an amber route? In I. Galanaki, H. Tomas, Y. Galanakis and R. Laffineur, (eds) *Between the Aegean and Baltic seas: prehistory across borders, 2005 Zagreb*. 349–356. Liège: Université de Liège.
- Pare, C. F. E. (1999) Weights and Weighing in Bronze Age Central Europe. In R.-G. Z. M. Kolloquium, (ed.) *Eliten in der Bronzezeit*: 421–514. Bonn: Habelt.
- Pare, C. F. E. (2013) Weighing, commodification, and money. In H. Fokkens and A. F. Harding (eds) *The Oxford handbook of the European Bronze Age*: 508–527. Oxford: Oxford University Press.

- Pászthory, K. (1985) *Der bronzezeitliche Arm- und Beinschmuck in der Schweiz*. Prähistorische Bronzefunde: 10/3. München: Beck.
- Primas, M. (1970) *Die südschweizerischen Grabfunde der älteren Eisenzeit und ihre Chronologie*. Basel: Birkhäuser.
- Primas, M. (1986) *Die Sichel in Mitteleuropa I (Österreich, Schweiz, Süddeutschland)*. Prähistorische Bronzefunde: 18/2. München: Beck.
- Primas, M. (2004) Wirtschaft und Gesellschaft urnenfelderzeitlicher Seeufersiedlungen – eine Aktualisierung. In B. Hänsel (ed.) *Parerga Praehistorica : Jubiläumsschrift zur Prähistorischen Archäologie: 15 Jahre UPA*: 113–133. Bonn: R. Habelt.
- Primas, M. and Schmid-Sikimić, B. (1997) Interaction Across the Alps. In Istituto Italiano di Preistoria e Protostoria, (ed.) *La Valle D'Aosta nel quadro della preistoria e protostoria dell'arco alpino centro-occidentale, 1994 Courmayeur*. Firenze: Istituto Italiano di Preistoria e Protostoria.
- Prüssing, P. (1982) *Die Messer im nördlichen Westdeutschland (Schleswig-Holstein, Hamburg und Niedersachsen)*. Prähistorische Bronzefunde: 7/3. München: Beck.
- Renfrew, C. (2005) Archaeology and commodification: the role of things in societal transformation. In W. M. J. v. Binsbergen and P. Geschiere (eds) *Commodification : Things, Agency, and Identities: (The Social Life of Things Revisited)*: 85–97. Münster: Lit.
- Renfrew, C. and Bahn, P. G. (2012) *Archaeology: theories, methods and practice*. London: Thames & Hudson.
- Richter, I. (1970) *Der Arm- und Beinschmuck der Bronze- und Urnenfelderzeit in Hessen und Rheinhessen*. Prähistorische Bronzefunde: 10/1. München: Beck.
- Říhovský, J. (1972) *Das Messer in Mähren und dem Ostalpengebiet*. Prähistorische Bronzefunde: 7/1. München: Beck.
- Rychner-Faraggi, A.-M. (1993) *Hauterive-Champréveyres 9: Métal et parure au Bronze final*. Neuchâtel: Musée cantonal d'archéologie.
- Rychner, V. (1979) *L'âge du bronze final à Auvernier (Lac de Neuchâtel, Suisse): typologie et chronologie des anciennes collections conservées en Suisse*. Lausanne: Bibliothèque historique vaudoise.
- Rychner, V. (1987) *Auvernier 1968–1975, le mobilier métallique du Bronze final: formes et techniques*. Lausanne: Bibliothèque historique vaudoise.
- Salzani, L. (2009). Rovigo. Notizie preliminari sulle ricerche nel sito dell'età del Bronzo di Grignano Polesine. *Quaderni di archeologia del Veneto* 25: 37–39.
- Schmid-Sikimić, B. (1996) *Der Arm- und Beinschmuck der Hallstattzeit in der Schweiz: mit einem Anhang der Gürtelhaken und Gürtelgehänge der Hallstattzeit im Schweizerischen Mittelland, Jura und Wallis*. Prähistorische Bronzefunde: 10/5. Stuttgart: Franz Steiner Verlag.
- Sharples, N. M. (2010) *Social relations in later prehistory: Wessex in the first millennium BC*. Oxford: Oxford University Press.
- Shennan, S. J. (2006) *Quantifying archaeology*. Iowa City: University of Iowa Press.
- Sievers, S. (1982) *Die mitteleuropäischen Hallstattdolche*. Prähistorische Bronzefunde: 6/6. München: Beck.
- Sommerfeld, C. (1994) *Gerätegeld Sichel: Studien zur monetären Struktur bronzezeitlicher Horte im nördlichen Mitteleuropa*. Berlin: Walter de Gruyter.
- Speck, J. (1981). Schloss und Schlüssel zur späten Pfahlbauzeit. *Helvetica Archaeologica* 45/48: 230–241.
- Sprockhoff, E. (1966) Ein Geschenk aus dem Norden. In R. Degen, W. Drack and R. Wyss (eds.) *Helvetica antiqua: Festschrift Emil Vogt: Beiträge zur Prähistorie und Archäologie der Schweiz*: 101–110. Zürich: Conzett und Huber.
- Sprockhoff, E. and Höckmann, O. (1979) *Die gegossenen Bronzebecken der jüngeren nordischen Bronzezeit*. Mainz: Römisch-Germanisches Zentralmuseum Mainz.

- Stahl, C. (2006) *Mitteuropäische Bernsteinfunde von der Frühbronze- bis zur Frühlatènezeit: ihre Verbreitung, Formgebung, Zeitstellung und Herkunft*. Dettelbach: J. H. Röhl.
- Steinhauser, R. A. and Primas, M. (1987). Der Bernsteinfund vom Montlingerberg (Kt. St Gallen, Schweiz). *Germania* 65: 203–214.
- Strathern, M. (1988) *The gender of the gift: problems with women and problems with society in Melanesia*. Berkeley: University of California Press.
- Suter, P. J., Hafner, A. and Glauser, K. (2006). Lenk – Schnidejoch. Funde aus dem Eis – ein vor- und frühgeschichtlicher Passübergang. *Archäologie im Kanton Bern* 6: 499–522
- Tarot, J. (2000) *Die bronzezeitlichen Lanzenspitzen der Schweiz: unter Einbeziehung von Liechtenstein und Vorarlberg*. Bonn: Habelt.
- Trnka, G. (1992) Neues zu den ‘Brotlaibidolen’. In A. Lippert and A. Spindler (eds) *Festschrift zum 50jährigen Bestehen des Institutes für Ur- und Frühgeschichte der Leopold-Franzens-Universität Innsbruck*: 615–622. Bonn: Habelt.
- Van Willigen, S. (2011) 3.48. Chiave. In F. Marzatico, R. Gebhard and P. Gleirscher (eds) *Le grandi vie delle civiltà: relazioni e scambi fra Mediterraneo e il centro Europa dalla preistoria alla romanità*: 476. Trento: Castello del Buonconsiglio.
- Vogt, E. (1952). Der Zierstil der späten Pfahlbaubronzen. *Zeitschrift für Schweizerische Archäologie und Kunstgeschichte* 4: 193–206.
- Von Hase, F. W. (1969) *Die Trensen der Früheisenzeit in Italien*. Prähistorische Bronzefunde: 16/1. München: Beck.
- Watts, C. (ed.) (2013) *Relation Archaeologies: humans, animals, things*, Abingdon: Routledge.
- Weber, C. (1996) *Die Rasiermesser in Südosteuropa*. Prähistorische Bronzefunde: 8/5. Stuttgart: Franz Steiner Verlag.